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ABSTRACT

Students come into online courses with different technological competencies, learning styles, communication skills, motivations, and attitudes. Four types of interactions can be identified in distance education--learner-content, learner-instructor, learner-learner, and learner-interface. There are ten techniques instructors can implement to help students taking an online course for the first time become successful online learners. These techniques include: (1) identify students' computer performance levels before enrollment, continue to upgrade the computer prerequisites, and enforce the prerequisite policy; (2) continue to assess students' skills and attitudes; (3) vary instructional components; (4) provide technical support; (5) create a departmental gateway World Wide Web site to expand technical support provided to students; (6) hold first class meetings on campus to enable students to meet with instructors and other students at least one time in person; (7) recruit graduate assistants' help; (8) offer course content in multiple formats; (9) rely on the flexibility of multiple communication avenues; and (10) make phone calls and mail preliminary handouts. (Contains 10 references.) (MES)

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# Catering to Students Taking an Online Course for the First Time

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## Abstract

Students come into online courses with different technological competencies, learning styles, communication skills, motivations, and attitudes. There are 10 techniques instructors can implement to help students taking an online course for the first time become successful online learners. These techniques include identifying students' computer performance levels before enrollment, continually assessing students' skills and attitudes, varying instructional components, providing technical support, creating a departmental gateway Web site, and holding first class meeting. Included are recruiting graduate assistants' help, offering course content in multiple formats, relying on the flexibility of multiple communication avenues, and making phone calls and mailing handouts.

### Introduction

The creation and innovations of the World Wide Web in the 1990s have revolutionized distance education. Hesser (1995) writes, "Like it or not, the computer has precipitated the entrance of an age of learning that is fundamentally independent" (p.68). Given the popularity of the Web, no other technological phenomenon has changed the delivery of distance education more than Web-based learning (Internet Introduction, 1998).

An estimated 33% of American colleges and universities offered distance education programs in 1995. By 1998, this number grew to nearly 60% with the growth of Web-based learning (Westbrook, 1999, p. 32). The idea of the Web bringing an individualized learning experience to distance education has its pros and cons. "The value of individualization is realized when a student can engage in learning at any time or in any place that may fit the individual's own unique needs, whether at home, at work, or in a center for learning" (Hesser, 1995, p. 68). An evident con is that technology sometimes prohibits students from interacting appropriately with course materials.

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### Four Types of Interactions

One theory, which has been developed and expanded upon in distance education literature in the past decade, is the interaction model for distance education. Moore (1989) outlines three specific types of interactions that are important in distance education. These interactions are learner-content (the learner interacts with content of course), learner-instructor interaction (the instructor and learner interact to answer questions and simulate motivation for learning course content), and learner-learner interaction (two or more learners interact about course content). Hillman et al. (1994) agrees with Moore that these interaction models are important in distance education, but that theses three interactions "fail to take into account the interaction that occurs when a learner must use these intervening technologies to communicate with the content, negotiate meaning, and validate knowledge with the instructor and other learners" (pp. 30-31). Hillman et al. adds a fourth type of interaction to Moore's model: the learner-interface interaction.

There is conflicting research available about the extent in which technological delivery systems affect the instructional design process and the transfer of learning in regards to the course content. Hillman et al. (1994) report some researchers suggest the technological delivery system of distance education is not a factor in how well students will learn the content of a course. Clark, 1983 (as cited in Hillman et al., 1994) concluded that "media are delivery vehicles for instruction and do not directly influence learning" (p.33). Winn, 1984 (as cited in Hillman et al, 1994) agrees with Clark. " The way information is delivered has very little effect on the way it is understood. We can only facilitate understanding by good planning and sound instruction" (p. 33).

Other researchers support the viewpoint of Hillman et al. and Moore that the delivery mode has everything to do with how well students can access the content of a course. Adams and Hamm, 1988 (as cited in Hillman et al.) found that unfamiliar technology mediums affected the interactions of the users and level of knowledge acquired (p. 33). Gilcher and Johnston, 1988 (as cited in Hillman et al.) found that training was crucial for workers to become more familiar with interactive media (p.33). Fear is also cited as a reason for not succeeding with the interface. In 1990, Rheingold (as cited in Hillman et al.) stressed that "fear is an important element in every novice computer user's first attempts to use a new machine or new software: fear of destroying data, fear of hurting the machine, fear of seeming stupid in comparison to other users, or even to the machine itself" (p. 33).

Perhaps one reason some researchers, such as Clark and Winn, did not view the learner-interface as an important element in education is because they perceived that students already knew how to operate the interface equipment. In 1988, computers were gaining momentum in society as more people regarded Apple® computers as an upcoming essential household item. At a time when so many people were trying to learn more about computers, it is surprising that these researchers would support this position.

In 1999, Robertson and Stanforth concluded that today's undergraduate students might not know as much about computers as some people would think. Their study concluded that more than half (56%) of a random sample (N=205) of Family and Consumer Sciences majors at two Midwestern public universities rated their computer skills as "fair" or below (p. 62). Abu-Jaber and Qutami (1998) found that students who did not demonstrate abstract cognitive skills were less likely to use their self-efficacy to learn general and advanced computer skills (p.270-271). These studies support the viewpoint that even today's students need help learning how to interact with the variety of technological interfaces available.

**Breaking Through the Learner-Interface Barrier**

In Fall 1999, the Department of Human Resource Development at the University of Tennessee, Knoxville began offering a series of four undergraduate courses taught entirely online. A self-directed committee

called the Diversified Instructional Modality Systems (DIMS) team worked for more than one year researching, developing, implementing and promoting these online courses. Both faculty and graduate assistants serving on the DIMS team quickly discovered that students who quickly developed learner-interface interaction skills had a better chance of becoming a successful distance education student because they could concentrate on coursework at a faster rate. In the spring 2000 semester, a pre-course survey administered in the first DIMS course showed that 100 percent of students in the class were taking their first course taught entirely online. The DIMS team has realized that students cannot take advantage of Moore's other three interaction models without first mastering the learner-interface interaction model. This viewpoint is supported by McIsaac and Blocher (1998) who write, "Instructional designers must include learner-interface interactions which enable the learner to have successful interactions with the mediating technology" (p. 44).

Since the Web allows students to become more independent learners and true distance education participants, it is important for students to quickly overcome technological problems. The quicker a student learns the interface, the quicker a student can concentrate on the course's content. It is logical that students taking an online course for the first time are the ones that will need the most help becoming comfortable with the interface in order to go on and concentrate on course content.

Hillman et al. (1994) offers that "the optimal solution would be a comprehensive learning program designed to ensure at least a minimum competency of learner-interface interaction" (p. 39). The researchers recommend that learners complete a technology credit course before enrolling in the distance education course. This is a good solution "on paper." Students enrolled in DIMS online courses are required to either complete a microcomputer applications course offered in the department (HRD 210), or pass a computer proficiency exam at a test-out rate of 80% before enrolling in an online course.

Hillman et al. (1994) also suggest that students can become familiar with the interface in the context of in-class exercises, orientation sessions, or technology credit courses (p. 36). While the suggestions of Hillman et al. are worthy, these methods require that students be present with the instructor. Distance education in the truest sense of the definition does not realistically allow all students the opportunity to come to campus for in-person sessions. Therefore, this paper investigates how to expand Hillman's suggestions to include methods that cater not only to students taking an online course for the first time, but also to truly distant learners.

The DIMS team has identified 10 techniques instructors can implement to help their students become successful online learners. Each technique is listed below with an explanation of how to effectively use this idea. The experiences of the DIMS team will be incorporated as examples to demonstrate how each technique helped improve students' online learning in the Department of Human Resource Development at the University of Tennessee, Knoxville. The suggestions of the DIMS team are as follow:

**1. Identify students' computer performance levels before enrollment, continue to upgrade the computer prerequisites, and enforce the prerequisite policy.** As mentioned above, Hillman et al. (1994) suggest that a computer course precede online courses. But it is also important to upgrade the computer skills taught in the prerequisite course and enforce that the prerequisite course be taken before online courses. All students should be able to demonstrate an appropriate level of computer knowledge and skills prior to taking a course offered entirely online. It is possible for some students, particularly adults who are returning to college, to meet the computer course requirement with an out-of-date computer class. Advisers should be instructed not to accept such computer classes, and students should be advised to update their computer skills prior to taking an online course. Institutions that already have a required computer course should make sure that training on the specific online delivery system is covered prior to enrollment.

The Department of Human Resource Development required students to take a specific microcomputer applications course offered through the department prior to registering for the first online course, but two problems persisted. First, the microcomputer applications course did not include training on the online course management system until one year after online courses began, prohibiting students from familiarizing themselves with the online course format until actually enrolling in the first online course. Second, the computer prerequisite was not strictly enforced until the Spring 2000 semester. The prerequisite was not strictly enforced because doing so would delay a significant number of juniors and seniors graduation dates. The department felt this would be unfair since the implementation of online courses was out of the students' control.

Enforcing the computer prerequisite has proven to benefit students. Prior to spring 2000, students would struggle with the learner-interface for about one month. The strict enforcement of the prerequisite policy cut the amount of time students needed to become comfortable with the learner-interface in half. In spring 2000, the prerequisite computer course will contain a lesson on the course management system. Instructors expect the time it takes students to become comfortable with the technology to again decrease in the summer 2000 semester.

**2. Continue to assess students' skills and attitudes.** Surveys should be conducted online at the beginning, middle, and end of the semester to assess which students need more help with computer skills. Using either the course management system or HTML forms, data should be collected to see what computer skills students are lacking coming into the course, which computer skills students are having difficulty learning while taking the course, and how much students felt learning computer skills took away from learning course content near the end of the course. This data can be used to make improvements to the prerequisite computer course and other forms of technical support available to online learners.

**3. Vary instructional components.** Based on the experiences of the DIMS team, it takes one-to-two years to perfect an online course. Instructors should not try to include every form of interactivity possible in a Web format all at one time. Instead, instructional components should become more varied with time and as the computer skills of online students increase. Most of the online courses supported by DIMS started as PowerPoint lessons. As of spring 2000, DIMS courses include video, audio, links, attachments, PowerPoint lessons, and more. While providing many types of interactive activities is important, instructors should ultimately consider the computer skills of the learners when selecting instructional components. All the interactivity in the world will not help a student learn if that student cannot access the course content. Simpler technology can sometimes promote better online learning.

**4. Providing technical support is essential.** When the Human Resource Development Department decided to offer online courses, there was a one-year transition period when both students and faculty worked to upgrade their computer skills. The department made a wise decision to hire a graduate student to provide technical support to students, faculty, and graduate assistants involved with online courses. The department set up telephone and e-mail support avenues. In addition, a graduate assistant was hired to work with each online class to provide technical support to both the students in the class and the professor. Students can call the technical support lines or their graduate assistant with questions about anything related to setting up their computer to handle the online course. The DIMS team adopted a 24 hours-a-day, 7 days-a-week policy for responding to students' questions.

**5. Creating a departmental gateway Web site expands technical support provided to students.** The gateway is a key resource for students taking an online course. The graduate assistant in charge of technical support developed the departmental gateway Web site and it has been accessed about 10,000 times since the fall 1999 semester. The gateway provides links to the department's online courses,

software and hardware requirements, links to free software, human resource development resources, key Web sites, tutorials, support information, information on the DIMS team, and much more. The Web site is available at **http://hrd.he.utk.edu/Dims-gate/main.htm**.

**6. Holding first class meetings on campus enables students to meet with instructors and other students at least one time in person.** Holding in-person meetings are important to help students register in the course management system, buy textbooks, and hear details about the class. The DIMS team has found these orientation meetings particularly helpful to students during the transition period because the majority of students taking an online course for the first time did not have credit for taking the prerequisite computer course. Students can participate in a hands-on workshop to be oriented with the course management system. Instructors who plan on implementing online discussion groups should also consider dividing students into groups during the first class meeting. This will allow the students to meet in person before communicating solely online. Students taking DIMS courses have reported that this is extremely beneficial no matter how many online courses they have taken. The downfall of required first class meetings is that truly distant learners are left out.

**7. Recruit graduate assistants' help.** Faculty on the DIMS team report spending up to ten times more time teaching an online course than a traditional classroom course. Graduate students can help save faculty members literally hundreds of hours by helping with instructional development, students' daily correspondences, technical support, and Web site maintenance. Generally a graduate student will be enrolled four semesters. Faculty members can develop an action plan to increase the graduate students' involvement with the course over these four semesters. For example, DIMS instructors generally coach a graduate assistant on how the course content should be delivered for one semester. After that, the faculty member can allow the graduate student to also answer e-mail related to course content. Often times, graduate students can help instructors increase their technology skills and provided suggestions on how course content can be delivered with more ease to the student. Graduate students on the DIMS team also take graduate-level online courses, so their experiences can be incorporated to improve online learning.

**8. Offer course content in multiple formats.** All computers are different. Instructors should not assume that what works on their computer will work on students computers. By uploading instructional components in multiple formats, more students will be able to quickly access course content. Students taking an online course for the first time discover during their first online course experience that their home computer might need more plug-ins and other software to complete the course. For this reason, the DIMS team decided to offer PowerPoint lessons through direct links to the PowerPoint lessons and through an HTML version. Offering both formats enabled students who needed time to download the PowerPoint Viewer in order to access the direct PowerPoint links to go on and access the course materials through their Web browsers using the HTML version.

**9. Rely on the flexibility of multiple communication avenues.** The flexibility and globalization of the Web enabled online learning to be possible, but it is the array of communication avenues that has enabled all four interaction models to flourish in this delivery format. Instructors should use e-mail for private learner-instructor interactions and feedback on assignments. Also learner-learner interaction is also possible through e-mail, so be sure to provide students with a list of classmates e-mail addresses. Discussion boards and chat sessions are also an excellent learning tool for reinforcing the four interaction models. Discussion boards and chat sessions will run smoothly if students are divided into smaller groups and given directions on how to log into these features and are provided a set of instructions on effective ways to participate in an online discussion. For many students, this could be their first time communicating in an online environment. Providing instructions will ease some students' fears about the purpose of participating in an online discussion board or chat session. If you plan on using the discussion board, students will direct their conversations more toward course content if a specific topic is assigned

for discussion. Ideas of discussion board assignments include assigning a Web site students can research and report a new finding from or discuss a case study from the textbook. Chat sessions work best when students have a set time they must report online. Instructors should be involved in the coordination and facilitation of live chat sessions. To manage the online conversation, groups could be assigned to log on at specific times. Students often report that chat sessions limit their freedom in an online course because they must report online at a certain time.

**10. Make phone calls and mail preliminary handouts.** For truly distant learners, a mailing with directions on how to enter the course site is a must. Providing a hard copy gives a personal touch from the instructor at the very beginning of the semester and helps students with inadequate computer skills get started in the class. This mailing will also help remove the void of missing the first class meeting. Even though the Web should be the primary mode of communication, instructors should not be afraid to call students when e-mail and other written forms of communication are not working. Often times a five-minute phone call can help a student more than five e-mail messages. For truly distant learners that do not have the computer capability to support video conferencing or the computer skills to effectively participate in more advanced communications, a simple telephone call can serve as an office visit. Students will appreciate the personal correspondence.

## Summary

The learner-interface model is important to research because of the growth in Web-based distance education programs. When an institution decides to offer online courses, faculty need to prepare for at least a one-year transition period. It has been the experience of the DIMS team that it really takes two years to develop, implement, and promote a series of online courses. When implementing online courses, administrators must make policies that allow students to gain the computer skills necessary to adopt to the learner-interface interactions that exist in online-learning environments. Administrators should coordinate the curriculum of a prerequisite computer course, allow a transition period for students and faculty members to enhanced their computer skills, and implement other techniques to help students and faculty members make a smooth transition to online environments.

While the main thrust of teaching is for students to learn content, administrators must understand that technical support and improving students' computer skills will always be a factor in online courses. Supporting literature points out that self-efficacy of computer skills will start to wear off after 2 ½ year period (Decker, 1997). There also is evidence to support the notion that preferred learning styles could help determine if employees or students will feel comfortable in computer-based learning. It is important to realize that some students will do better to be taught in person (Dowdall, 1992).

As Web technologies improve, students' skills will need updating. The future of the Web should make online learning more transparent, but not unless institutions prepare students to interact with the learner-interface aspect of online learning. This preparation requires administration, faculty and students to rely on techniques that go beyond traditional teaching and learning efforts.

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